

## PCT COOPERATION TREATY

**PCT**  
**NOTIFICATION OF TRANSMITTAL**  
**OF COPIES OF TRANSLATION**  
**OF THE INTERNATIONAL PRELIMINARY**  
**EXAMINATION REPORT**

(PCT Rule 72.2)

From the INTERNATIONAL BUREAU

To:

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Date of mailing (day/month/year) 05 September 2001 (05.09.01)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference FH991205PCT	
International application No. PCT/EP99/09978	International filing date (day/month/year) 15 December 1999 (15.12.99)
Applicant FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E. V. et al	

**1. Transmittal of the translation to the applicant.**

The International Bureau transmits herewith a copy of the English translation made by the International Bureau of the international preliminary examination report established by the International Preliminary Examining Authority.

**2. Transmittal of the copy of the translation to the elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following elected Offices requiring such translation:

JP, KR, US

The following elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

EP

**3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report.

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer Juan CRUZ Telephone No. (41-22) 338.83.38
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**Translation**

PATENT COOPERATION TREATY

**PCT**

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

(PCT Article 36 and Rule 70)

4

Applicant's or agent's file reference FH991205PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP99/09978	International filing date (day/month/year) 15 December 1999 (15.12.99)	Priority date (day/month/year) 24 February 1999 (24.02.99)
International Patent Classification (IPC) or national classification and IPC H04K 1/00, H04N 7/167, 7/26		
Applicant FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E. V.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 10 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 24 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 22 September 2000 (22.09.00)	Date of completion of this report 29 June 2001 (29.06.2001)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP99/09978

## I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

☐ the international application as originally filed.

☒ the description, pages 1, 2, 4-24, as originally filed,  
pages \_\_\_\_\_, filed with the demand,  
pages 3, 3a-3b, filed with the letter of 07 June 2001 (07.06.2001)  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☒ the claims, Nos. \_\_\_\_\_, as originally filed,  
Nos. \_\_\_\_\_, as amended under Article 19,  
Nos. \_\_\_\_\_, filed with the demand,  
Nos. 1-36, filed with the letter of 07 June 2001 (07.06.2001)  
Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☒ the drawings, sheets/fig 1/8-8/8, as originally filed,  
sheets/fig \_\_\_\_\_, filed with the demand,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/fig \_\_\_\_\_

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/EP99/09978

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. \_\_\_\_\_

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV

## 1. Cited document:

D1 = QUACKENBUSH ET AL.: 'Noiseless Coding of Quantized Spectral Components in MPEG-2 Advanced Audio Coding' 1997 IEEE ASSP WORKSHOP ON APPLICATIONS OF SIGNAL PROCESSING TO AUDIO AND ACOUSTICS, 19 October 1997 (1997-10-19).

## 2. The various groups of inventions are: Claims 1 to 24 and 25 to 36.

These groups are not so linked as to form a single general inventive concept for the following reasons (PCT Rule 13.1):

D1 describes (see Figure 1) a device for encoding a data stream from an audio signal, comprising the features of the encoder defined in the claims.

The first group additionally claims an encryption of the signal by means of resorting the quantized spectral values and the second group additionally claims an encryption by means of resorting code words.

The technical relationship between the first and the second group lies in the features of the encoder. These features are known from D1.

No technical relationship within the meaning of PCT Rule 13.2 exists between the features of the

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/JP 99/09978

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV

encryption in the first and in the second group.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims	1-36	YES
	Claims		NO
Inventive step (IS)	Claims	1-24	YES
	Claims	25-36	NO
Industrial applicability (IA)	Claims	1-36	YES
	Claims		NO

## 2. Citations and explanations

## 1. Cited documents:

D1 = QUACKENBUSH ET AL.: 'Noiseless Coding of Quantized Spectral Components in MPEG-2 Advanced Audio Coding' 1997 IEEE ASSP WORKSHOP ON APPLICATIONS OF SIGNAL PROCESSING TO AUDIO AND ACOUSTICS, 19 October 1997 (1997-10-19)

D2 = US-A-5 796 838

D3 = US-A-4 534 037

D4 = EP-A-0 649 261

D5 = WO98/21852

D6 = US-A-5 636 279.

2. The subject matter of Claim 1 is novel and inventive in relation to the prior art cited in the international search report. Claim 1 therefore meets the requirements of PCT Article 33(2) and (3).

D1 describes (see Figure 1) a device for encoding a data stream from an audio signal, comprising the features of the encoder defined in the claims.

D2 describes a spectral inversion in which the output spectrum is inverted in relation to the input spectrum. The shape of the spectrum is only reflected by the frequency inversion, but not completely changed, as would be the case with scrambling.

None of the documents cited in the search report suggests the resorting of quantized spectral values in a frequency band to which one code table of a plurality of code tables is allocated.

By means of the aforementioned resorting process, a "soft" encryption is achieved which does not change the data stream syntax of the encoder.

The subject matter of Claim 1 is therefore novel and inventive in relation to the prior art cited in the search report.

3. The subject matter of Claims 2 to 10 is novel and inventive in relation to the prior art cited in the international search report. Claims 2 to 10 therefore meet the requirements of PCT Article 33(2) and (3).

Claims 2 to 10 are either directly or indirectly dependent on Claim 1.

4. The subject matter of Claims 11 to 13 is novel and inventive in relation to the prior art cited in the international search report. Claims 11 to 13 therefore meet the requirements of PCT Article 33(2)



and (3).

The subject matter of Claims 11 to 13 differs from the subject matter of Claim 1 in that former claims have additional means for canceling the encryption on the basis of a first code and for carrying out an encryption on the basis of a second code.

The subject matter of Claims 11 to 13 is therefore novel and inventive for the reasons mentioned under point 2.

5. The subject matter of Claims 14, 15 and 16 is novel and inventive in relation to the prior art cited in the international search report. Claims 14, 15 and 16 meet the requirements of PCT Article 33(2) and (3).

Claims 14, 15 and 16 are either directly or indirectly dependent on Claims 11 to 13.

6. The subject matter of Claims 17 to 19 is novel and inventive in relation to the prior art cited in the international search report. Claims 17 to 19 therefore meet the requirements of PCT Article 33(2) and (3).

Claims 17 to 19 relate to a device for decoding a data stream, wherein the resorting process defined in Claim 1 is cancelled.

The subject matter of Claims 17 to 19 is therefore novel and inventive for the reasons mentioned under point 2.

7. The subject matter of Claims 20 to 24 is novel and inventive in relation to the prior art cited in the international search report. Claims 20 to 24 therefore meet the requirements of PCT Article 33(2) and (3).

Claims 20 to 24 define a method with method steps which correspond to the features of the previously claimed device.

The subject matter of Claims 20 to 24 is therefore novel and inventive for the reasons mentioned under point 2.

8. The subject matter of Claim 25 is not inventive in relation to the content of D1 and D3. Claim 25 therefore does not meet the requirements of PCT Article 33(3).

D1 describes (see Figure 1) a device for encoding a data stream from an audio signal, comprising the features of the encoder defined in the claims.

D3 describes an encryption of audio signals by means of resorting bit groups between neighboring code words. If the frequency conversion described in D3 (see column 4, lines 56-61) is not the aim, it would be obvious to a person skilled in the art to carry out the encryption by resorting code words. Thus the encryption of an audio signal by resorting code words is obvious from D3.

A person skilled in the art would inevitably attempt to combine the encoding known from D1 with the encryption which is obvious from D3.

9. The subject matter of Claims 26 and 27 is not inventive in relation to the content of D1 and D3. Claims 26 and 27 therefore do not meet the requirements of PCT Article 33(3).

The additional feature of Claim 26 relates to a feature of an encrypting device with which a person skilled in the art is familiar.

The additional feature of Claim 27 is known from D3.

10. The subject matter of Claims 28 and 29 is not inventive in relation to the content of D1, D3 and D5. Claims 28 and 29 therefore do not meet the requirements of PCT Article 33(3).

The subject matter of Claims 28 and 29 differs from the subject matter of Claim 25 in that the former claims have additional means for canceling the encryption on the basis of a first code and for carrying out an encryption on the basis of a second code.

The transition from a first code to a second code is known from D5. A person skilled in the art would incorporate this feature into the claimed encrypting device according to the circumstances, without an inventive step being involved.

11. The subject matter of Claims 30 and 31 is not inventive in relation to the content of D1 and D3. Claims 30 and 31 therefore do not meet the requirements of PCT Article 33(3).

Claims 30 and 31 relate to a device for decoding a data stream. These claims do not have any additional features in relation to the claims to the encrypting device which could distinguish their subject matter from the cited prior art in an inventive manner.

12. The subject matter of Claims 32 to 34 is not inventive in relation to the content of the cited prior art. Claims 32 to 34 therefore do not meet the requirements of PCT Article 33(3).

Claims 32 to 34 define a method with method steps which correspond to the features of device Claims 25 to 31. The objections raised against Claims 25 to 31 therefore also apply to Claims 32 to 34.

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

Claims 15 and 16 are dependent on subsequent claims.